

DaimlerChrysler AG

Claims

1. Exhaust gas cleaning system for an internal combustion engine with at least one catalytically active component, which is designed such that its catalytically active coating (1) comprises at least one region with high light-off temperature in combination with a high temperature resistance (2) and at least one further region with a low light-off temperature in combination with a reduced temperature resistance (3) in comparison with the at least one region, characterized in that the exhaust-gas-side surface of the catalytically active coating (1) in the intake region of the at least one catalytically active component has at least partially a diffusion layer (4) or is at least partially covered by a diffusion layer (4).
2. Apparatus according to claim 1 characterized in that the at least one region with high light-off temperature in combination with a high temperature resistance (2) in contrast to the at least one further region with a low light-off temperature in combination with a reduced temperature resistance (3) in comparison with the at least one region has a lower specific noble metal content and/or a larger noble metal particle diameter.
3. Apparatus according to one of the preceding claims characterized in that the cell density in the intake region of the catalytically active component is lower than in the discharge region of the catalytically active component.
4. Apparatus according to one of the preceding claims characterized in that the catalytically active component in its intake region is configured with a support material with a high specific heat capacity and in its discharge region with a support material with low specific heat capacity.
5. Apparatus according to one of the preceding claims characterized in that the catalytically active component has a cone shape.

6. Apparatus according to one of the preceding claims characterized in that the catalytically active coating (1) is multiple layered, with the individual layers having a differing composition, with the at least one region with high light-off temperature in combination with a high temperature resistance (2) oriented toward the exhaust-gas side and the at least one further region with a low light-off temperature in combination with a reduced temperature resistance (3) in comparison with the at least one region being applied on the side away from the exhaust gas.
7. Apparatus according to one of the preceding claims characterized in that the catalytically active coating (1) with at least one region with high light-off temperature in combination with a high temperature resistance (2) and with at least one further region with a low light-off temperature in combination with a reduced temperature resistance (3) in comparison with the at least one region is applied in the form of a gradient, with predominantly the region with high light-off temperature (2) being applied in the intake region of the catalytically active component and predominantly the at least one further region with a low light-off temperature (3) being applied in the discharge region of the catalytically active component.
8. Apparatus according to one of claims 1 through 5 characterized in that the catalytically active coating (1) has predominantly or wholly the at least one further region with a low light-off temperature in combination with a reduced temperature resistance (3).